

**ADVANCED ENZYME TECHNOLOGY
(BIOT 5131)**

Time Allotted : 3 hrs

Full Marks : 70

Figures out of the right margin indicate full marks.

*Candidates are required to answer Group A and
any 5 (five) from Group B to E, taking at least one from each group.*

Candidates are required to give answer in their own words as far as practicable.

**Group - A
(Multiple Choice Type Questions)**

1. Choose the correct alternative for the following: **10 × 1 = 10**
- (i) Transferase belong to E.C group of
(a) 1 (b) 4
(c) 6 (d) 2
- (ii) The enzyme mainly used in biopulping is
(a) Cellulase (b) Xylanase
(c) Protease (d) Lipase
- (iii) Cyanogen bromide activation is done in which Immobilization technique?
(a) Adsorption (b) Covalent Binding
(c) Entrapment (d) Cross-linking
- (iv) 1 U of Enzyme is equal to
(a) 16.67 nano katal of enzyme (b) 67.16 nano katal of enzyme
(c) 30.16 nano katal of enzyme (d) None of these
- (v) Cancer potentially can be prevented by
(a) Injecting with ribonuclease (b) Starving the tumor with asparaginase
(c) Starving the body with asparaginase (d) none of these
- (vi) Lignin mainly consist of
(a) Aromatic alcohol (b) Aliphatic alcohol
(c) Aromatic hydrocarbon (d) Aliphatic hydrocarbon
- (vii) Subtilisin is one type of
(a) Protease (b) Lipase
(c) Amylase (d) Nuclease

- (viii) The enzyme used to treat Leukaemia is
(a) Asparaginase (b) Glutaminase
(c) Either of i or ii (d) Both i and ii
- (ix) Breaking of fungal mycelia is best done by
(a) Sonication (b) Enzyme treatment
(c) X-Press (d) Ball mill
- (x) Lipolase is used in
(a) Detergent Industry (b) Leather industry
(c) Paper Industry (d) Textile Industry

Group - B

2. (a) What do you mean by Enzyme nomenclature?
(b) Describe any two classes of enzyme.
(c) Write notes on competitive inhibition of enzymes.

2 + 6 + 4 = 12

3. Explain how the cell mass can be separated by
(i) Centrifugation
(ii) Filtration.

6 + 6 = 12

Group - C

4. (a) Describe the different adsorbents used in column chromatography.
(b) Explain how does Ion Exchange Chromatography work?
5. (a) Briefly describe the working principle of Affinity Chromatography.
(b) Briefly describe Packed Bed reactor as Immobilized Enzyme Bioreactor.

6 + 6 = 12

6 + 6 = 12

Group - D

6. (a) Mention the functions of enzymes in paper industry.
(b) What is the difference between lactase and raffinase?
(c) What is lactose intolerance?

6 + 4 + 2 = 12

7. (a) What is the function of sucrase and how it is immobilised?

(b) Briefly explain chillhazing and stailing.

(c) What is HFCS and how it is prepared?

3 + (3 + 3) + 3 = 12

Group – E

8. (a) Define artificial enzyme.

(b) How enzymes can be used in the treatment of cancer?

(c) Genetic engineering has a huge potential for economic enzyme production — discuss.

2 + 4 + 6 = 12

9. (a) Briefly explain the classification of biosensors based on (i) Generation and (ii) Transducer.

(b) Describe the design and mechanism of a biosensor taking any one exothermic reaction as example.

6 + 6 = 12

Department & Section	Submission Link
BT	https://classroom.google.com/c/Mjc0NDA0NzcyODc0/a/Mjg3MDUwOTk1MTY5/details

